3GPP TSG-RAN WG2 Meeting #121 R2-23xxxxx  
Athens, Greece, Feb. 27 – Mar. 3, 2023

Agenda Item: 9.5

Source: Session Chair (Samsung)

Title: Report from session on NR SL

Document for: Approval

Time Schedule   
Please refer to the latest schedule in the RAN2 inbox on the public 3GPP servers.

## List and Status of Offline Email Discussions

## Approved outgoing LSs

## 4.2 V2X and Side-link corrections Rel-15 and earlier

REL-15 and Earlier WIs related to V2x and Sidelink are in scope but not listed explicitly (long list).

This Agenda Item is treated in the V2X and Sidelink Breakout session

## 5.2 NR V2X

(5G\_V2X\_NRSL-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Aug 20; WID: RP-200129).

CR rapporteurs will take care of miscellaneous CRs to collect small changes. Please contact / coordinate with CR rapporteur company first for small changes (e.g. non-controversial clarification/correction, editorial correction, etc.).

### 5.2.1 General and Stage-2 corrections

Including incoming LSs, rapporteur inputs, etc.

R2-2300040 LS on Pemax,c of S-SSB transmission when multiple resource pool is configured in a carrier (R4-2214421; contact: vivo) RAN4 LS in Rel-17 5G\_V2X\_NRSL-Core To:RAN1, RAN2

* Noted (?)

[Session chair]: Any impact on Pcompensation?

R2-2301379 [draft]Reply LS on Pemax,c of S-SSB transmission vivo LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN4 Cc:RAN1

R2-2300914 (draft)Reply LS to RAN4 on Pemax,c of S-SSB transmission ZTE Corporation, Sanechips LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN4 Cc:RAN1

* [AT121][501][V2X/SL] Response LS to RAN4 (Vivo)

**Scope:** Inform RAN2 decision on Pcompensation impact.

**Intended outcome:** LS in R2-2302021

**Deadline:** Comeback at 3/2 CB session

R2-2300051 LS on PSFCH configured power with multiple resource pools (R4-2220553; contact: LGE) RAN4 LS in Rel-17 5G\_V2X\_NRSL-Core To:RAN1 Cc:RAN2

* Noted (?)

### 5.2.2 Control plane corrections

This agenda item may utilize a summary document on RRC (Huawei).

[R2-2301762](C:\\Users\\mtk65284\\Documents\\3GPP\\tsg_ran\\WG2_RL2\\TSGR2_121\\Docs\\R2-2301762.zip" \o "C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\TSGR2_121\Docs\R2-2301762.zip) Clarification on cell reselection priority handling for V2X/NR sidelink and deprioritization request. Kyocera, vivo, LG Electronics, Ericsson, Samsung, Nokia, Nokia Shanghai Bell CR Rel-16 38.304 16.8.0 0327 - F 5G\_V2X\_NRSL-Core (Moved from 5.1.3)

R2-2301461 Summary on RRC CRs Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core Late

R2-2300485 Miscellaneous corrections on 38.331 Huawei, HiSilicon CR Rel-16 38.331 16.11.0 3807 - F 5G\_V2X\_NRSL-Core

R2-2300486 Miscellaneous corrections on 38.331 Huawei, HiSilicon CR Rel-17 38.331 17.3.0 3808 - A 5G\_V2X\_NRSL-Core

R2-2300836 Miscellaneous corrections on TS 38.331 for NR sidelink Xiaomi CR Rel-16 38.331 16.11.0 3843 - F 5G\_V2X\_NRSL-Core

R2-2300837 Miscellaneous corrections on TS 38.331 for NR sidelink Xiaomi CR Rel-17 38.331 17.3.0 3844 - A 5G\_V2X\_NRSL-Core

R2-2301021 Clarification on retransmission number in SL-PSSCH-TxConfigList vivo CR Rel-16 38.331 16.11.0 3858 - F 5G\_V2X\_NRSL-Core

R2-2301022 Clarification on retransmission number in SL-PSSCH-TxConfigList vivo CR Rel-17 38.331 17.3.0 3859 - A 5G\_V2X\_NRSL-Core

R2-2301377 Clarification on sl-MaxTransPower vivo CR Rel-16 38.331 16.11.0 3885 - F 5G\_V2X\_NRSL-Core

R2-2301378 Clarification on sl-MaxTransPower vivo CR Rel-17 38.331 17.3.0 3886 - A 5G\_V2X\_NRSL-Core

* [AT121][502][V2X/SL] R16 RRC corrections (Huawei)

**Scope:** Discuss corrections in R2-2300485/R2-2300486, R2-2300836/R2-2300837, R2-2301021/R2-2301022, and R2-2301377/R2-2301378. Merge agreeable corrections.

**Intended outcome:** 38.331 CR in R2-2302022/R2-2302023 and discussion summary in R2-2302024 (if needed).

**Deadline:** Comeback at 3/2 CB session

### 5.2.3 User plane corrections

This agenda item may utilize a summary document on MAC (LG).

R2-2301926 Summary on MAC CRs LG Electronics discussion Rel-16 5G\_V2X\_NRSL-Core Late

R2-2300834 Correction on resource (re-)selection for NR sidelink Xiaomi CR Rel-16 38.321 16.11.0 1527 - F 5G\_V2X\_NRSL-Core

R2-2300835 Correction on resource (re-)selection for NR sidelink Xiaomi CR Rel-17 38.321 17.3.0 1528 - A 5G\_V2X\_NRSL-Core

R2-2300861 Correction on the cast type indicator setting of MAC PDU only containing MAC CE CATT CR Rel-16 38.321 16.11.0 1530 - F 5G\_V2X\_NRSL-Core

R2-2300862 Correction on the cast type indicator setting of MAC PDU only containing MAC CE(s) CATT CR Rel-17 38.321 17.3.0 1531 - A 5G\_V2X\_NRSL-Core

[Session chair]: Rel-17 CR may not be correct considering IUC MAC CE with GC/BC.

R2-2301525 Corrections on MAC reset regarding SL configured grant ASUSTeK CR Rel-16 38.321 16.11.0 1555 - F 5G\_V2X\_NRSL-Core

R2-2301526 Corrections on MAC reset regarding SL configured grant ASUSTeK CR Rel-17 38.321 17.3.0 1556 - A 5G\_V2X\_NRSL-Core

* [AT121][503][V2X/SL] R16 MAC corrections (LG)

**Scope:** Discuss corrections in R2-2300834/R2-2300835, R2-2300861/R2-2300862, and R2-2301525/R2-2301526. Merge agreeable corrections.

**Intended outcome:** 38.321 CR in R2-2302025/R2-2302026 and discussion summary in R2-2302027 (if needed).

**Deadline:** Comeback at 3/2 CB session

## 6.10 NR Sidelink enhancements

(NR\_SL\_enh-Core; leading WG: RAN1; REL-17; WID: RP-202846)

Tdoc Limitation: 3 tdocs

Note for RRC and MAC CRs, CR rapporteur’s summary and suggestion may be provided.

### 6.10.1 Control plane corrections

Includes also stage-2 corrections if needed

R2-2300138 Discussion on left issues on Tx Profile OPPO, Ericsson, Huawei, HiSilicon, ZTE, Apple, CATT, vivo discussion Rel-17 NR\_SL\_enh-Core

R2-2300894 Corrections on SL DRX and IUC CATT CR Rel-17 38.300 17.3.0 0623 - F NR\_SL\_enh-Core

R2-2300504 Correction to 38300 on IUC Ericsson CR Rel-17 38.300 17.3.0 0615 - F NR\_SL\_enh-Core

R2-2300911 Correction on description of IUC cast type ZTE Corporation, Sanechips CR Rel-17 38.300 17.3.0 0624 - F NR\_SL\_enh-Core

R2-2301822 Correction for NR sidelink communication Sharp CR Rel-17 38.300 17.3.0 0640 - F NR\_SL\_enh-Core

* [AT121][504][V2X/SL] R17 38.300 corrections (CATT)

**Scope:** Discuss corrections in R2-2300894, R2-2300911, and R2-2301822. Merge agreeable corrections. Note IUC cast type related correction should wait for the related RAN2 decision.

**Intended outcome:** 38.300 CR in R2-2302028 and discussion summary in R2-2302029 (if needed).

**Deadline:** Comeback at 3/2 CB session

R2-2301458 Summary on control plan CRs Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core Late

R2-2300387 Correction on 38.331 Xiaomi CR Rel-17 38.331 17.3.0 3801 - F NR\_SL\_enh-Core

R2-2301352 Correction to resource exclusion field description Nokia, Nokia Shanghai Bell draftCR Rel-17 38.331 17.3.0 NR\_SL\_enh-Core

R2-2301376 Correction on mode-1 trigger condition in SUI procedure vivo CR Rel-17 38.331 17.3.0 3884 - F NR\_SL\_enh-Core

R2-2301530 Corrections on DRX timers for SL ASUSTeK CR Rel-17 38.331 17.3.0 3906 - F NR\_SL\_enh-Core

R2-2301825 Correction for Measurement Event Triggering Criteria Sharp Corporation CR Rel-17 38.331 17.3.0 3925 - F NR\_SL\_enh-Core

* [AT121][505][V2X/SL] R17 RRC corrections (Huawei)

**Scope:** Discuss corrections in 2300387, R2-2301352, R2-2301376, R2-2301530, and R2-2301825.

**Intended outcome:** 38.331 CR in R2-2302030 and discussion summary in R2-2302031.

**Deadline:** Comeback at 3/2 CB session

### 6.10.2 User plane corrections

R2-2300012 LS on cast types for IUC scheme 1 (R1-2212822; contact: LGE) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2

[Selection of cast type and/or L2 destination id]:

When there is no data to send in GC/BC:

* Option 1: Up to UE implementation (Proposal 1 in R2-2300130)
* Option 2: Dedicated L2 destination id for IUC is (pre)configured (R2-2300503)
* Option 3: IUC for every GC/BC L2 id(s) configured (Proposal 2 in R2-2300757)
* Option 4: Need coordination with SA2 on higher layer impact (Proposal 1 in R2-2300838)
* Option 5: IUC in GC/BC is not supported in RAN2 point of view (R2-2300896)

When there is data to send in GC/BC:

* Option 1: Up to UE implementation
* Option 2: IUC is sent with the data with the corresponding L2 destination id (Proposal 1 in R2-2300757)

R2-2300130 Discussion on left issues on user plane procedure OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2300503 discussion on IUC aspects in case of GC and BC Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2300505 Correction to 38331 on IUC Ericsson CR Rel-17 38.331 17.3.0 3809 - F NR\_SL\_enh-Core

R2-2300757 Discussion on IUC broadcast and groupcast Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2300896 Discussion on the cast type of IUC scheme 1 CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2301724 Discussion on L2 ID for GC/BC IUC LG Electronics France discussion Rel-17 38.321 NR\_SL\_enh-Core Late

R2-2300488 GC and BC transmission for IUC information Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2301473 BC/GC for IUC transmission Samsung Research America discussion Rel-17 NR\_SL\_enh-Core

[Non-preferred resource indication to PHY]:

R2-2300755 Discussion on the MAC layer procedure for non-preferred resource set Apple, Ericsson, ZTE, Intel, Qualcomm, Huawei, HiSilicon, OPPO, InterDigital discussion Rel-17 NR\_SL\_enh-Core

R2-2300756 Correction on the handling of IUC with non-preferred resource set Apple, Ericsson, ZTE, Intel, Qualcomm, Huawei, HiSilicon, OPPO, InterDigital CR Rel-17 38.321 17.3.0 1523 - F NR\_SL\_enh-Core

Proposal 3 in R2-2300838

R2-2301353 IUC open issues Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

R2-2301927 Summary on user plan CRs LG Electronics discussion Rel-17 NR\_SL\_enh-Core Late

R2-2300131 Corrections on user plane for SL enhancement OPPO CR Rel-17 38.321 17.3.0 1511 - F NR\_SL\_enh-Core

R2-2300487 Corrections on TS 38.321 for SL enhancements Huawei, HiSilicon CR Rel-17 38.321 17.3.0 1514 - F NR\_SL\_enh-Core

R2-2300838 Discussion on the remaining issues for NR sidelink Xiaomi discussion

R2-2300839 Miscellaneous corrections on TS 38.321 for NR sidelink Xiaomi CR Rel-17 38.321 17.3.0 1529 - F NR\_SL\_enh-Core

R2-2300895 Correction on SL IUC Information and Request MAC CE CATT CR Rel-17 38.321 17.3.0 1532 - F NR\_SL\_enh-Core

R2-2300912 Miscellaneous Correction on MAC for IUC ZTE Corporation, Sanechips CR Rel-17 38.321 17.3.0 1533 - F NR\_SL\_enh-Core

R2-2300913 Correction on restriction of using IUC information ZTE Corporation, Sanechips CR Rel-17 38.321 17.3.0 1534 - F NR\_SL\_enh-Core

R2-2301375 Clarification on IUC related transmission vivo CR Rel-17 38.321 17.3.0 1549 - F NR\_SL\_enh-Core

R2-2301531 Correction on IUC request MAC CE ASUSTeK CR Rel-17 38.321 17.3.0 1558 - F NR\_SL\_enh-Core

R2-2301620 Correction on number of MAC CEs in a MAC PDU Sharp CR Rel-17 38.321 17.3.0 1559 - F NR\_SL\_enh-Core

R2-2301745 User plane corrections on NR Sidelink enhancements LG Electronics France CR Rel-17 38.321 17.3.0 1566 - F NR\_SL\_enh-Core Late

* [AT121][506][V2X/SL] R17 MAC corrections (LG)

**Scope:** Discuss corrections in R2-2300131 (including the corresponding proposal 3 in R2-2300130), 2nd change in R2-2300487, R2-2300839 (including the corresponding proposal 2 in R2-2300838), R2-2300895, R2-2300912, R2-2300913, R2-2301375, R2-2301531, R2-2301620, and R2-2301745. Note corrections on IUC in GC/BC should be aligned with RAN2 decision.

**Intended outcome:** 38.321 CR in R2-2302032 and discussion summary in R2-2302033.

**Deadline:** Comeback at 3/2 CB session

## 8.15 NR Sidelink evolution

(NR\_SL\_enh2; leading WG: RAN1; REL-18; WID: RP-222806)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

Note some agenda item(s) may use pre-meeting discussion based on a summary document.

### 8.15.1 Organizational

Incoming LS and rapporteur inputs.

R2-2300135 Work plan of R18 SL-Evo OPPO, LG Work Plan Rel-18 NR\_SL\_enh2

### 8.15.2 SL-U

Including further updates/details on CAPC, consistent LBT failure, SL DRX impact, CG impact, other MAC impacts (COT sharing, SL resource (re)selection, etc.). Note making a progress on the issues we already discussed last meeting is prioritized.

[Confirm working assumption#1]

* Mapping PQI 90/91/92/93/21/22/23/55/56/57/58 to CAPC priority class 1.
* Mapping PQI 59/61 to CAPC priority class 3.
* Mapping PQI 25 to CAPC priority class 2.
* Mapping PQI 24/26/60 to CAPC priority class 1.

P2 in R2-2300615

P1-3 in R2-2300622

P1 in R2-2300840

P1 in R2-2300970

[Confirm working assumption#2]

* As in NR-U, the lowest priority CAPC of the logical channel(s) with MAC SDU multiplexed in the TB is used regardless of whether the TB also contains SL MAC CEs in addition to MAC SDUs.

[Confirm working assumption#3]

* Use the CAPC of the standardized PQI or the CAPC of non-standardized PQI configured in SIB/pre-configuration which best matches the QoS characteristics of the current non-standardized PQI based on one or more QoS characteristics

Proposal 3 in R2-2300126

* Updated to “RAN2 to confirm the WA as “For an IDLE/INACTIVE/OOC UE, if a QoS flow cannot be mapped to a non-default SLRB: 1) if the per-bearer CAPC is configured in SIB/Pre-configuration, the UE use the configured CAPC; 2) else, up to UE implementation to select CAPC of the standardized PQI which best matches the QoS characteristics of the QoS flow based on one or more QoS characteristics, and the detailed UE behaviour on how to decide on the CAPC of the MAC-SDU is also up to UE implementation.”

How does the UE judge “best-match”?

* P3 in R2-2300126
* P2 in R2-2300343
* P4 in R2-2300119
* P4 in R2-2300970

[Confirm working assumption#4]

* SL-specific consistent LBT failure detection is not relevant to cast type/DST/unicast link.

[SL LCP restriction to COT]

P3 in R2-2300519

P20 in R2-2300915

P10 in R2-2300519

[Need of assistance information for COT]

P12 in R2-2300840

[SL DRX]

SL DRX active time and SL LBT failure

P5 in R2-2300126

SL DRX active time and COT

P9 in R2-2301719

P8 in R2-2300706

SL HARQ RTT

P5-6 in R2-2300670

[SL CG]

P7-8 in R2-2300126

[SL consistent LBT failure]

Indication of SL consistent LBT failure

P15-19 in R2-2300519

P2 in R2-2300706

UE autonomous SL consistent LBT failure recovery

P2 in R2-2300670

P2 in R2-2300623

[SL resource (re)selection]

Resource (re)selection upon SL LBT failure

P1 in R2-2300499

LBT impacts on resource (re)selection

P1-2 in R2-2301475

Reserved resource and COT

P1-3 in R2-2300136

R2-2300119 Remaining issues on CAPC for SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2300120 Further discussin on SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2300126 Discussion on remaining issues in SL-U OPPO discussion Rel-18 NR\_SL\_enh2

R2-2300136 Discussion on LBT impact in SL-U OPPO, MediaTek Inc., Intel discussion Rel-18 NR\_SL\_enh2

R2-2300339 Discussion on SL LBT failure for UE in RRC idle/inactive/OOC state SHARP Corporation discussion NR\_SL\_enh2

R2-2300342 Remaining issues on RAN2 aspects for SL-U vivo discussion

R2-2300343 Discussion on remaining issues for CAPC in SL-U vivo discussion

R2-2300499 Discussion on other MAC impacts for NR SL-U Lenovo discussion Rel-18 NR\_SL\_enh2-Core

R2-2300519 Aspects of channel access mechanisms Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2300520 CAPC table and MAC multiplex rules Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2300615 Further discussion on CAPC for SL-U Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2300616 On SL-LBT aspects Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2300622 CAPC and COT sharing for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2300623 LBT Failure for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2300624 Configured Grants for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2300645 Remaining issues on channel access priority in SL-U Spreadtrum Communications discussion Rel-18

R2-2300646 Consistent LBT failure handling for SL-U Spreadtrum Communications discussion Rel-18

R2-2300669 Consideration on CAPC for SL-U CATT discussion Rel-18 NR\_SL\_enh2

R2-2300670 Further Discussion on LBT CATT discussion Rel-18 NR\_SL\_enh2

R2-2300705 Discussion on remaining issues of CAPC in SL-U Apple discussion Rel-18 NR\_SL\_enh2

R2-2300706 Further discussion on MAC impacts due to LBT and COT sharing in SL-U Apple discussion Rel-18 NR\_SL\_enh2

R2-2300840 Discussion on channel access for sidelink operation on unlicensed spectrum Xiaomi discussion

R2-2300841 Discussion on LBT for sidelink operation on unlicensed spectrum Xiaomi discussion

R2-2300915 Discussion on MAC related aspects for SL-U ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2300916 Discussion on CAPC in SL-U ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2300970 Remaining issue of channel access priority for NR SL-U Lenovo discussion Rel-18

R2-2300971 Discussion on LBT impact to MAC for NR SL-U Lenovo discussion Rel-18

R2-2300989 LBT failure detection and recovery procedure for SL-U NEC discussion Rel-18 NR\_SL\_enh2

R2-2300994 Discussion on sidelink un-licensed ITL discussion Rel-18

R2-2301356 Considerations on consistent LBT failure and HARQ procedure Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh2

R2-2301357 On Sidelink DRX and remaining CPAC issues Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh2

R2-2301462 Considerations on resource allocation for SL-U Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh2 R2-2212406

R2-2301474 Remaining SL CAPC issues Samsung Research America discussion Rel-18 NR\_SL\_enh2

R2-2301475 SL resource allocation Samsung Research America discussion Rel-18 NR\_SL\_enh2

R2-2301542 Discussion on SL-U ASUSTeK discussion Rel-18 NR\_SL\_enh2

R2-2301700 Discussion on sidelink unlicensed Qualcomm India Pvt Ltd discussion

R2-2301705 Discussion on sidelink CAPC Qualcomm India Pvt Ltd discussion

R2-2301719 Discussion on RAN2 aspects on SL-U LG Electronics France discussion Rel-17 38.321 NR\_SL\_enh2

R2-2301722 LBT impact to SL-U MediaTek Inc. discussion Rel-18

R2-2301723 Channel Access Priority Classes for SL-U MediaTek Inc. discussion Rel-18

### 8.15.3 SL-FR2

To see company’s initial view on RAN2 scopes (e.g. identify RAN2 scopes, relation to RAN1 discussion, etc.). Note this agenda item may not be handled during the meeting (e.g. due to lack of time, premature RAN1 progress, etc.).

R2-2300127 Discussion on SL-FR2 impact OPPO discussion Rel-18 NR\_SL\_enh2

R2-2300394 Discussion on SL-FR2 impact to RAN2 Xiaomi discussion

R2-2300489 Discussion on SL-FR2 Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2300521 SL in FR2 Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2300617 On FR-2 aspects for SL-U Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2300671 Discussion on Sidelink Operation on FR2 CATT discussion Rel-18 NR\_SL\_enh2

R2-2300707 Discussion on RAN2 work of SL FR2 Apple discussion Rel-18 NR\_SL\_enh2

R2-2300917 Initial consideration on sidelink FR2 ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2301374 Discussion on RAN2 aspects for FR2 licensed spectrum vivo discussion Rel-18

R2-2301701 Discussion on Sidelink FR2 Qualcomm India Pvt Ltd discussion

R2-2301720 Discussion on RAN2 aspects on SL-FR2 LG Electronics France discussion Rel-18 NR\_SL\_enh2

R2-2301887 RAN2 Aspects of NR Sidelink Operation in FR2 Fraunhofer IIS, Fraunhofer HHI discussion Rel-18 NR\_SL\_enh2